

LEST WE FORGET: UNIT IX: BIOTECHNOLOGY

1. IVF leading to test tube baby is a part of biotechnology.
2. Genetic engineering, unlike traditional hybridization, allows us to isolate and introduce only one or a set of desirable genes.
3. Plasmids and bacteriophages have the ability to replicate within bacterial cells independent of the control of chromosomal DNA.
4. Ori is responsible for controlling the copy number of linked DNA.
5. *Agrobacterium tumefaciens* is a pathogen of dicot plants.
6. Since DNA is a hydrophilic molecule, it cannot pass through cell membranes.
7. In a continuous culture system, the cells are maintained in their physiologically most active log/exponential phase.
8. Cellular totipotency in plants is the basis of plant tissue culture.
9. The method of producing thousands of plants through tissue culture is called micropropagation.
10. Plants produced through tissue culture are somaclones.
11. Even if the plant is infected with a virus, the meristem (apical and axillary) is free of virus.
12. Isolated protoplast can be fused to produce somatic hybrids.
13. RNAi takes place in all eukaryotic organisms as a method of cellular defense.
14. Enzyme replacement therapy and bone marrow transplant are not completely curative options for treatment of ADA deficiency.
15. ELISA is based on the principle of antigen-antibody interaction.
16. Over 95% of all existing transgenic animals are mice.
17. Transgenic mice are being used to test the safety of polio vaccine.
18. Most of the industrialized nations are rich financially but poor in biodiversity and traditional knowledge.
19. GEAC actually stands for Genetic Engineering Appraisal Committee.
- *20. It is desirable to use restriction enzymes that make asymmetrical cut.

- *21. Ethidium bromide is an intercalating agent commonly used as a fluorescent tag in molecular biology laboratories for techniques such as agarose gel electrophoresis.
- *22. When creating recombinant DNA, it's crucial to cut both the donor DNA and the vector DNA with the same restriction enzyme.
- *23. Bacteria protect their own DNA from the action of their restriction enzymes through a process called DNA methylation.
- *24. Calcium is essential in creating the right conditions for bacterial cells to become competent and successfully take up external DNA.
- *25. Insertional inactivation is a widely used method in genetic engineering for selecting recombinant transformants.
- *26. It is beneficial for a plasmid to have multiple restriction sites, but ideally only one for each enzyme.
- *27. Gene therapy can be particularly effective for monogenic diseases because replacing or correcting a single defective gene can potentially cure or mitigate the disease.
- *28. Insulin cannot be administered because it will be susceptible to degradation by the digestive enzymes in the stomach and small intestine and will not be absorbed in small intestine even if it survives digestive enzymes.